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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Numbering Resource Optimization	)	CC Docket No. 99-200
	)	
Connecticut Department of Public Utility Control Petition for Rulemaking to Amend the Commission's Rule Prohibiting Technology-Specific or Service-Specific Area Code Overlays	)	RM No. 9258
	)	
Massachusetts Department of Telecommunications and Energy Petition for Waiver to Implement a Technology-Specific Overlay in the 508, 617, 781, and 978 Area Codes	)	NSD File No. L-99-17
	)	
California Public Utilities Commission and the People of the State of California Petition for Waiver to Implement a Technology-Specific or Service-Specific Area Code	)	NSD File No. L-99-36

To: The Commission

COMMENTS OF COX COMMUNICATIONS, INC.

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SUMMARY

The Commission should evaluate any numbering optimization proposal in light of the central goals of this proceeding. In particular, the Commission should seek long-term solutions, not short-term approaches that extend the life of the NANP by only a few years. These solutions should increase the underlying efficiency of numbering resource utilization, so that growth in numbering assignment more closely parallels the growth in telephone lines. In the long run, such solutions will be much more cost effective than the other approaches described in the *Notice.*

Two specific mechanisms best meet these goals: modification of the Business Rating Information Database System ("BRIDS") and unassigned number porting ("UNP"). BRIDS modification would increase efficiency by allowing a single NXX code to cover multiple rating points. UNP, like number pooling, would permit a single NXX code to be shared by multiple carriers. Either of these mechanisms would significantly increase the life of the North American Numbering Plan ("NANP") at costs that are a small fraction of the costs of replacing the NANP.

The Commission should consider certain other optimization mechanisms that could have long-term effects on the efficiency of numbering resource utilization. The most useful of these approaches are rate center consolidation and number pooling, both of which could significantly reduce future demand for NXX codes. Along with these mechanisms, the Commission should consider policies that would reclaim inactive NXX blocks, which would give carriers incentives not to hoard these resources. At the same time, the Commission should adopt guidelines that would permit states to enact specific conservation plans that are consistent with Commission policies and the requirements of Section 251(e).

There also are several optimization proposals that the Commission should reject:

- Mandatory ten-digit dialing, by itself, would have no positive effects on numbering resource usage, and would impose significant societal costs.

- "D" digit expansion would increase the capacity of the NANP, but would not address the core issue of inefficiency of numbering resource utilization. Expansion of the "D" digit also would be very costly, and the costs likely would outweigh the benefits.
- Charging carriers for numbering resources is outside the Commission's authority because it does not have the power to impose fees in excess of the costs of administration. It also would be very difficult to set charges that would recognize the costs imposed by all carriers and that would be competitively neutral.
- Mandated fill rates other than those contained in the current assignment guidelines would likely discriminate against new carriers and impede competition. While it might be possible to devise a system that would account for the differences in carriers' situations, the benefits of such a system would not be large.
- Area code relief is not a mechanism that would conserve telephone numbers. It only would allocate existing numbering resources and, therefore, would not address the issues in this proceeding.

The Commission should complement the substantive numbering optimization plans it adopts by adopting measures to improve the administration of numbering resources. It is important to refine the reporting, recordkeeping and forecasting mechanisms now in place to ensure that carriers, numbering administrators and regulators have an accurate picture of the status of the NANP. The Commission also should adopt audit and enforcement provisions to back up these administrative processes. As with the optimization mechanisms, it is important that the Commission provide detailed guidance on these matters to prevent misunderstandings and to provide a basis for any enforcement actions that may be required.

TABLE OF CONTENTS

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	)	
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	)	
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To: The Commission

COMMENTS OF COX COMMUNICATIONS, INC.

Cox Communications, Inc. ("Cox"), by its attorneys, hereby submits its comments in response to the *Notice* in the above-referenced proceeding.[1] As shown below, Cox believes that the Commission should focus its efforts on solutions that will have the greatest effect on the

[1] Numbering Resource Optimization, Connecticut Department of Public Utility Control Petition for Rulemaking to Amend the Commission's Rule Prohibiting Technology-Specific or Service-Specific Area Code Overlays, Massachusetts Department of Telecommunications and Energy Petition for Waiver to Implement a Technology-Specific Overlay in the 508, 617, 781, and 978 Area Codes, California Public Utilities Commission and the People of the State of California Petition for Waiver to Implement a Technology-Specific or Service-Specific Area Code, CC Docket No. 99-200, RM No. 9258, NSD File No. L-99-17, NSD File No. L-99-36, FCC 99-122, *Notice of Proposed Rulemaking* (rel. May 27, 1999) (the *"Notice"*).

availability of numbering resources. While interim or low-impact approaches to numbering resource optimization may be useful in the short term, they will not significantly increase the life of the current North American Numbering Plan (the "NANP").

I. Introduction

Cox and its affiliated companies have been involved in numbering administration issues since the beginning of this decade, as an active participant in Commission proceedings, state proceedings and industry groups. Cox has been interested in these matters both as a consumer of telecommunications services and as a provider. Today, Cox is certificated as a competitive local exchange carrier ("CLEC") in thirteen states and serves more than 60,000 customers and more than 95,000 access lines in its service territories. As a result of its commitment to providing facilities-based local exchange service, Cox already is one of the nation's largest CLECs and, through several recently-announced acquisitions of additional cable systems, Cox is poised to continue to expand the scope of its service offerings around the country.

Access to numbering resources is crucial to Cox's business as a CLEC because it cannot provide telephony services to most of its cable customers if it cannot provide them with telephone numbers. At the same time, Cox recognizes that regulators and the industry must take steps to slow the current demand for area code relief and, in the end, prevent premature exhaust of the NANP. Unnecessary area code relief imposes costs on consumers and carriers alike, including many consumer and societal costs that are not easily measured, and those costs pale in comparison to the impact of exhaust of the NANP, as described below. Therefore, a proper solution should not be measured in terms of its ability to provide NPA relief, but rather as to its ability to cause more efficient use of the NPAs currently in place by making them available to as many needy carriers as possible.

For these reasons, Cox submits that band-aid approaches will not suffice. It is not enough to extend the life of the NANP by a few short years. Rather, the Commission should seek to adopt solutions that permanently increase the efficiency of telephone number assignment and that will align the growth in number assignment much more closely with the growth in telephone lines. As described below, two potential approaches to numbering resource optimization – modification of BRIDS and unassigned number pooling – meet this standard. These comments also discuss other approaches to conserving numbers that are described in the *Notice* and the potential benefits and costs of adopting these alternatives.

II. The Commission Should Focus Its Efforts on Methods that Will Have the Maximum Effect, Rather than on Stop-Gap Number Conservation Methods.

The basic cause for the rapid depletion of numbering resources is that those resources are assigned to relatively small areas and in relatively large blocks. Optimization measures that address these issues are the most likely to prevent premature exhaust of the NANP. Measures that do not address these fundamental issues, however, are unlikely to have a long term effect on the life of the current NANP. For instance, opening up the "D" digit of NXX codes will increase the number of NXX codes by approximately 25 percent, but those NXX codes will be used no more efficiently than existing NXX codes. On the other hand, measures that will permit the fill rates of existing NXX codes to be increased and that reduce the need for future NXX code assignments are likely to extend the life of the NANP significantly because they address the problems that are causing premature exhaust of area codes and, ultimately, of the NANP.

Although there are several potential ways to increasing the efficiency of numbering resource usage, two particular approaches stand out. Either of these approaches would allow assignment of individual telephone numbers to specific carriers, eliminating the current requirement for a carrier to take an entire NXX code if it wishes to serve a new area. The first

approach is modification of the Business Rating Input Database System (also known as "BRIDS"), which would permit individual telephone numbers to be associated with specific locations. The second is unassigned number porting ("UNP"), which would permit a carrier to use any unassigned number associated with a particular rate center. These proposals are discussed in more detail below.

A. Modification of BRIDS Will Maximize the Efficiency of Telephone Number Assignment and Greatly Extend the Life of the NANP.

BRIDS is the system used by telephone carriers to rate calls from one point to another. BRIDS associates a unique rating point, designated by V and H coordinates, with each NPA-NXX combination. The distance traveled by each telephone call, which is the basis on which many calls are rated, is calculated by comparing the V and H coordinates of the NPA-NXX of the calling number with those of the called number.

This system, by its very nature, requires assignment of an NXX to a single rating point within an area code. That means that a carrier that wants to serve an entire area code, such as the 540 area code in Virginia, must obtain an NXX code for each of the multiple rating points in that area code if it wants calls to its customers to be rated in the same way as calls to the incumbent local exchange carrier's customers.[2] The inefficiency of this approach to number assignment is

[2] Many area codes have hundreds of rating points. As a theoretical matter, a CLEC could obtain a single NXX and use a single rating point for an entire area code, but this is not a practical business strategy because of the way incumbent local exchange carriers ("ILECs") rate calls. If, for instance, a CLEC obtained a single NXX code for the 540 area code, with a rating point located in Charlottesville, all calls to the CLEC's customers from Bell Atlantic customers in Abingdon would be toll calls and all calls from Charlottesville would be local calls, regardless of where the CLEC's customers were located. If a customer was located in Abingdon, this likely would prevent the customer from using the CLEC's service. To avoid this concern, the CLEC now would be required to obtain an NXX code for Abingdon and every other place it intended to serve in the 540 area code.

obvious and, in practice, it means that many NXX codes assigned in recent years have fill rates well below twenty percent and, in some cases, below ten percent.

There is, however, no requirement that the BRIDS database be limited to the six-digit NPA-NXX combination. It could include all ten digits of the telephone number. This would allow a specific telephone number to be assigned to any of the rating points within an area code served by the switch where the NXX is opened and for calls to that number to be rated properly as local or long distance calls. There would be no need for CLECs to obtain separate NXX codes for every rating point that they serve out of the same switch, which would allow more efficient use of existing NXX codes and would greatly slow the demand for NXX codes in the future. Indeed, calculations have shown that modification of BRIDS in this fashion could extend the life of the NANP by as much as thirty years.[3] Using the type of present value calculation described in the *Notice,* the potential benefit of this modification of BRIDS would be $43.7 billion.[4]

The costs of modifying BRIDS to permit 10-digit designation of rating points are insignificant compared to the benefits. It has been estimated that BRIDS modification would take six months and would cost a total of $250,000.[5] As described below, the costs of BRIDS modification also compare quite favorably to the costs of other, less effective mechanisms of increasing efficiency of number assignment.

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[3] This calculation is based on the assumption that BRIDS modification would increase overall fill rates to 75 percent or more over time.

[4] The *Notice* assumes a cost of $100 billion to replace the NANP and calculates the present value of that cost as $74.4 billion. *Notice,* ¶ 34 n.51. Using the same assumptions as the *Notice,* but assuming that the replacement of the NANP will take place in 40 years, the present value of the cost of replacing the NANP would be $30.7 billion, a difference of $43.7 billion.

[5] These estimates are based on the work of a 1997 California task force on rating and routing issues.

Adopting BRIDS modification has significant advantages over other potential approaches as well. If BRIDS were modified to permit rating on a 10-digit basis, there would be little need for states to mandate rate center consolidation as a number conservation mechanism. BRIDS modification and rate center consolidation would serve the same purpose, although BRIDS would be more effective because it would allow carriers to spread the numbers in an NXX across all the rate centers in the area code served by a single CLEC or ILEC switch without requiring local number portability.[6] Rate center consolidation would have a much more limited effect and, in fact, would reduce the ability to rate calls based on distance traveled, if future services require such rating.[7] Moreover, comparison of the costs and time frames for BRIDS modification and large-scale rate center consolidation favor BRIDS by a wide margin.

Similarly, BRIDS modification could eliminate any need to implement number pooling and the implementation costs necessary to support pooling. Although there is no reason both BRIDS modification and number pooling could not be implemented simultaneously, in practice BRIDS modification is easier to implement and will have a greater effect on demand for numbering resources than thousands block pooling. BRIDS modification is easier to implement than number pooling because it requires only modification to existing database fields, while number pooling requires changes to SSPs and SCPs used for Common Channel Signaling.[8] This ease of implementation translates not only to quicker implementation, but to lower costs.

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[6] With local number portability, a single NXX also could be spread across multiple switches.

[7] Of course, ILECs might choose to pursue rate center consolidation for their own business reasons, such as to respond to competition from CLECs. BRIDS modification would allow the current rating information to remain intact so that current formulas could be used to rate calls. At the same time, rating tables also could be modified to permit the same effects on call rating as can be achieved through rate center consolidation without losing the high granularity provided by a large number of rating points.

[8] *Notice,* ¶ 157. As the *Notice* indicates, there are significant technical issues that must be addressed before number pooling can be implemented. *Id.,* ¶¶ 157-8.

Although many CLECs support BRIDS modification because their switches serve multiple rate centers, ILECs have opposed this approach to numbering resource optimization because of the character of their legacy networks. Although the ILECs have cited costs as an important factor in their opposition, it is apparent that the benefits of adopting BRIDS far outweigh the costs. It appears that the more significant reason for ILEC opposition is that they are concerned that BRIDS modification will deplete their reserve of historically valuable numbers. The reality is, however, that those numbers do not belong to the ILECs, but rather are a shared resource to be used for the benefit of customers. The ILECs' desire to protect their current position should be irrelevant in this proceeding.

B. Unassigned Number Porting Will Significantly Extend the Life of the NANP by Using Existing Mechanisms for Providing Access to Numbering Resources.

For the reasons described above, BRIDS modification is the best way to extend the life of the NANP. The Commission also should consider implementation of unassigned number portability, which attacks the problem of the efficiency of number utilization from a different angle.

BRIDS modification starts from the premise that each carrier has a pool of numbers assigned to it and increases efficiency of number usage by allowing the numbers to be used over a wider area than is possible today. UNP, however, breaks the historical relationship between carriers and the numbering resources assigned to them by allowing any carrier to use any number in an opened NXX code.

The best analogy to UNP is the current toll free portability regime. Before 800 number portability was implemented, individual NXX codes within the 800 Service Access Code were assigned to individual long distance carriers. Once 800 portability was implemented, each

interexchange carrier was given the ability to assign any unused toll free number to any customer.[9] This not only facilitated customer choice of carriers, but also increased the efficiency with which toll free numbers are used. Under the toll free number portability regime, new resources are assigned for toll free numbers only when the entire existing resources are exhausted, rather than when all the NXXs are assigned to carriers, regardless of whether or not those NXXs are efficiently used.

UNP would allow the same efficiencies to be translated to local telephone service at each individual rate center. Every number in each portability-capable NXX assigned to a rate center would be available to all carriers serving that rate center. New NXXs would be assigned to the rate center when the rate center as a whole approached full capacity. This would greatly increase the efficiency of number usage for the NXXs assigned to each rate center. Equally important, the availability of UNP would allow CLECs seeking to serve a new rate center to use numbers from existing NXX codes, rather than obtaining new NXX codes of their own. This alone would greatly reduce the demand for new NXXs and, consequently, for area code relief.[10]

The effect of UNP on demand for numbering resources would be dramatic. UNP could extend the life of the NANP by nearly as long as BRIDS modification, with similar cost savings. Cox estimates that UNP could increase utilization levels to as much as 85 percent.[11] Moreover,

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[9] *See* Provision of Access for 800 Service, *Memorandum Opinion and Order on Reconsideration and Second Supplemental Notice of Proposed Rulemaking*, 6 FCC Rcd 5421, 5422 (1991).

[10] Under the current implementation of local telephone number portability, every CLEC in an area code could be required to obtain at least one NXX code to establish the location routing number used to route calls under local number portability, but the impact of this requirement would be much less than the current effect of requiring CLECs to obtain NXX codes in every rate center.

[11] This analysis is based on historical data for number usage prior to the time that local telephone competition began.

UNP could be implemented relatively quickly, in as few as six months.[12] It does not require any new technologies, but only the extension of the current number portability regime. While UNP could be implemented initially without a separate administration mechanism, any administration process that would be required in the long run could be modeled on the current toll free number assignment process. Administration could be performed by the NANPA or by a separate UNP administrative agent.

There are parties that oppose the implementation of UNP. Some of these parties argue that it is somehow impossible to port a telephone number unless it has been assigned. This is incorrect, and even if it were true, there are ample workarounds.[13] Other implementation issues, such as capacity issues, also are overstated, especially when compared to the costs of entering thousands blocks into portability databases for thousands block pooling. UNP would use only a relatively few numbers for new service and additional lines. Notably, the adoption of unassigned number porting does not require the wholesale porting of unassigned numbers from the date of implementation. In practice, capacity requirements will increase gradually as the demand for CLEC services increases.[14] This will allow all carriers the opportunity to ramp up their capacity gradually to meet demand. Given the current penetration of CLEC services, it is unlikely that the

[12] Certain modifications to operations support systems would be necessary to permit UNP and it is estimated that these changes would take six months. Because these systems already support assigning numbers to new resale customers, the necessary modifications would be minor. UNP requires no changes to existing local number portability systems.

[13] For instance, carriers already have the ability to request the assignment of new telephone numbers in the context of orders for new resale services in ILEC operations support systems ("OSS"). In principle, UNP would not require anything different from these assignments. To the extent that existing OSS requires input of address or similar information, there is nothing that prevents the use of the new customer's address or even a dummy address to satisfy this requirement.

[14] In fact, to the extent that the numbers assigned to CLECs via UNP ultimately are used by new customers, those numbers would have to be included in portability databases whether or not they were subject to UNP.

capacity requirements for UNP would have a significant impact on any carrier in the immediate future.

Thus, BRIDS modification and UNP are both cost-effective, highly efficient approaches to numbering resource optimization. While there is no reason not to consider implementing other numbering resource optimization mechanisms in conjunction with these approaches, the Commission should concentrate its efforts and those of state regulators and the industry, on implementing the most effective solutions. BRIDS modification and UNP meet that standard, and should be adopted.

III. While the Commission Should Consider Other Numbering Resource Optimization Measures, It Should Not Adopt Any Measures that Do Not Provide Significant Benefits at Relatively Low Cost.

In addition to BRIDS modification and UNP, there are a variety of other measures that the Commission may consider as part of its effort to optimize the use of numbering resources. As described above, these measures must be evaluated by considering whether they provide significant benefits, *i.e.*, whether they significantly increase the life of the NANP, in light of the costs that would have to be incurred to implement them. Measures that have only modest benefits may be considered, but only if they impose relatively low costs, offer near term relief and do not impair the implementation of other optimization mechanisms. When these criteria are applied to the methods proposed in the *Notice,* it is apparent that four basic approaches – rate center consolidation, pooling, reclamation of inactive NXX codes and state implementation of conservation mechanisms – should be considered. Other mechanisms, including charging carriers for numbering resources, ten digit dialing and mandated fill rates, will not have a meaningful effect on the use of numbering resources or suffer from other significant flaws that preclude their consideration.

A. The Commission Should Consider Implementing Certain Number Optimization Mechanisms.

1. Rate Center Consolidation.

Rate center consolidation is the process of combining existing rate centers to reduce the number of rate centers in an area code. Consolidation, by itself, does not change the number of NXX codes assigned in an area code, but it effectively makes NXX codes now assigned to a relatively small geographic area available to a larger portion of the area code, thereby increasing the potential utilization of existing numbering resources.

Reducing the number of rating points in an area code also reduces the demand for new numbering resources. There are two reasons for this effect. First, as described above, NXX codes already assigned to the area code would be used more efficiently, reducing demand for new NXX assignments to existing carriers. Second, new carriers would have less demand for NXX codes because they would need fewer codes to cover every rating point in an area code. Rate center consolidation itself generally would have no immediate effect on the utilization of NXX codes, but it should increase overall utilization over time and, consequently, extend the life of an area code.

A more immediately effect of consolidation could be to allow the return of some NXX codes by carriers, especially if existing NXX codes are lightly used. This would increase overall utilization within the affected area code.[15] Rate center consolidation would be consistent with

[15] NXX codes should not be reclaimed except in conformance with general reclamation guidelines, which are discussed below, or unless they are voluntarily surrendered by carriers. *See infra* Part III(A)(3). Otherwise, reclamation would have a disproportionate impact on new carriers, which are the most likely to have relatively thinly-populated NXX codes.

and would enhance the effects of number pooling, another numbering conservation measure that the Commission should support.[16]

Rate center consolidation is not, however, without adverse marketplace effects. The best-defined of these effects is that it can turn intraLATA toll calls into local calls, reducing toll revenues for all carriers. For that reason, ILECs subject to rate center consolidation often seek increases in local exchange rates in conjunction with consolidation.[17] The loss of intraLATA toll revenue also may affect CLEC entry into an area with consolidated rate centers. Finally, consumers are affected by rate center consolidation because intraLATA toll, which is a relatively competitive service, is replaced by local exchange service, for which competition is just beginning to emerge. This means that it could take longer for the full benefits of competition to be realized. Rate center consolidation also must account for and mitigate any adverse effects on E-911.

Rate center consolidation would most likely produce the greatest numbering conservation and benefits in relatively urbanized areas with large local calling areas, which contain multiple rate centers, where competition is vigorous and demand for numbers is great. Because consolidation largely has a prospective effect, it likely would be less successful in rural areas, where competition is not yet strong and where demand for numbering resources is driven principally by growth in the number of customers being served. These and other considerations

[16] *See infra* Part III(A)(2).

[17] This and other impacts of rate center consolidation can be minimized if all of the consolidated rate centers are in the same local calling area. Limiting consolidation in this way, however, also limits the potential benefits.

suggest that the Commission should, as it has in the past, allow state regulators to determine how and when to employ rate center consolidation.[18]

2. Number Pooling.

The *Notice* devotes the most consideration to number pooling.[19] Pooling, albeit to a lesser degree than BRIDS modification and UNP, would improve the efficiency of number utilization by assigning numbers in blocks much smaller than an entire NXX code. Under number pooling, portions of an NXX code not fully utilized would be made available to carriers other than the carrier holding the NXX code. In effect, number pooling would divide an NXX code into smaller segments, each of which could be assigned to a different carrier.[20] Pooling's effectiveness would be maximized if the Commission were to adopt the model described below, which is designed to reduce the costs of administration; to accommodate maximum long-term increases in utilization of numbering resources; and ensure prompt implementation.

First, the Commission should support the long term goal of individual telephone number pooling. Like BRIDS modification and UNP, individual telephone number pooling will yield a much higher utilization rate than less granular approaches, including thousands block pooling. For that reason, the Commission should not permit an implementation of thousands block pooling that does not accommodate a later migration to individual telephone number pooling.

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[18] *See* Petition for Declaratory Ruling and Request for Expedited Action on the July 17, 1997 Order of the Pennsylvania Public Utility Commission Regarding Area Codes 412, 610, 215, and 717, *Memorandum Opinion and Order and Order on Reconsideration*, 13 FCC Rcd 19009, 19029 & n.93 (1998) (the "*Pennsylvania Numbering Order*").

[19] *Notice*, ¶¶ 130-214.

[20] The theoretical distinction between UNP and pooling is that UNP assigns an entire NXX to a carrier, and unassigned numbers are available to any other carrier, while pooling assigns discrete blocks (*e.g.*, one thousand numbers) within an NXX to separate carriers. At high enough levels of granularity, there is little practical difference between UNP and number pooling.

Thousands block pooling should be allowed only as a transitional step to individual telephone number pooling.

While the so-called "industry position" favors thousands block pooling, the Commission should recognize that this position largely has been driven by ILEC desires to maintain control over numbering resources. Thousands block pooling, particularly as currently proposed, effectively insulates the ILECs' NXX codes from pooling, leaving CLECs and other carriers to bear the burden of numbering conservation.[21]

On the same grounds, there is no need to create a separate administrative arm for number pooling. At least initially, and possibly for the foreseeable future, it would be much more efficient to employ the "virtual pooling" arrangement proposed by a number of carriers to the Industry Numbering Committee. Under this arrangement, carriers would maintain their existing NXX codes, but would provide reports to NANPA periodically on available numbers within those NXXs.[22] The carriers would be responsible, using existing number assignment systems, for the administration of the numbers that are available to the pool and the aggregate of the available numbers across all carriers would constitute a "virtual pool" of available numbers. Using the virtual pooling approach would significantly reduce the time necessary to implement telephone number pooling, whether at the thousands block or individual telephone number level.

If the Commission adopts pooling as an approved numbering optimization mechanism, it also should address key implementation issues. As a practical matter, pooling cannot be made

[21] One reason that ILECs are insulated from the impact of thousands block pooling is that the proposed maximum contamination levels for thousands blocks to be assigned to the pool are too low. A contamination level of 25 percent, rather than the 10 percent proposed, would free up many more thousands blocks for pooling, increasing overall utilization of numbering resources significantly.

[22] This concept was described in more detail in a July 10, 1997 contribution to the Industry Numbering Committee's LNP Workshop.

available anywhere where permanent local number portability has not been implemented, so any deployment schedules must begin with markets that already have portability. In addition, it would be most appropriate to begin implementation of pooling in regions that are undergoing rapid depletion of NXX codes.

If implementation is delegated to the states, regulators should be allowed to implement pooling under a wide range of circumstances. In particular, pooling especially may be appropriate if an area is undergoing area code relief planning, if it is expected to be in planning in the next two years or if it is in jeopardy. The number of competing carriers in an area should not be the sole criterion for determining whether pooling will be implemented, so that regulators do not unwittingly create barriers to market entry by making it easier to obtain numbering resources in some areas than in others. Pooling should be deployed on either an NPA-wide or rate center-area basis. As described below, the Commission should not allow states to implement pooling as a substitute for necessary area code relief.[23]

Cox believes that the implementation time frames described for number pooling in the *Notice* are reasonable, and that thousands block pooling could be implemented in ten to nineteen months.[24] The nineteen month time frame is more reasonable if a separate pooling administrator must be designated. If, however, virtual pooling is adopted, then pooling could be implemented more quickly. Pre-port with efficient data representation is an appropriate mechanism for loading the number portability database with the necessary information for pooling. While Cox believes that using the existing local number portability mechanisms is the fastest way to implement pooling, the recurring cost of that approach is high. Modification to the Local

[23] *See infra* Part III(A)(4).

[24] *Notice*, ¶ 158.

Exchange Routing Guide or to the common channel signaling system could accomplish the same result at a lower per-call cost.[25]

The Commission also should address several other important implementation issues if it adopts a number pooling strategy. First, the Commission should require that the impacts of pooling on E911 be established and addressed through field trials of pooling during the implementation period. It is critical that E911 not be disrupted by pooling or any other numbering optimization activity. Second, the Commission should require carriers that are assigned NXX codes to assign numbers from those codes sequentially by thousands blocks, *i.e.*, to assign numbers first from one thousands block, then from the next, rather than assigning them from throughout the NXX code. Exceptions would be permitted only in response to specific end-user needs and technical requirements that affect particular carriers. This requirement will maximize the number of thousands blocks available for pooling.[26] Third, the Commission should adopt requirements concerning inventories to be maintained under pooling. Cox believes that the nine month inventory for the industry pool and the service provider pool represents a fair compromise of all parties' interests.

The Commission also should address recovery of the costs of implementing pooling. Because all carriers will share in the benefits of pooling, it is appropriate for each carrier to bear its own costs of implementing pooling. Industry-wide costs, such as the costs of modifying the LNP database and pooling administration, should be borne by the entire industry, using a

[25] As a general matter, Cox also suggests that any technical recommendations by the North American Numbering Council should be preceded by adoption of standards by the American National Standards Institute.

[26] If individual telephone number pooling is implemented, this requirement no longer need apply.

mechanism like the one used to recover NANPA costs. Price cap LECs should be allowed to recover any pooling costs that fall within the interstate jurisdiction as exogenous costs.

3. Reclamation of Inactive NXX Blocks.

The Commission also should establish specific guidelines for reclamation of inactive NXX blocks. Although reclamation is unlikely to have a significant direct impact on numbering resource utilization, it may reduce incentives for carriers to seek to obtain NXX codes that they do not need. Moreover, there is little cost to establishing and implementing reclamation guidelines.

The most fundamental element of the reclamation guidelines must be the principle that only inactive NXX blocks can be reclaimed. A block should be deemed active if it has been associated with a rating point, has had routing information entered in the Local Exchange Routing Guide and has had telephone numbers assigned to end users. If any of these criteria are not met, the NXX code should be considered inactive.

NANPA should begin the process of reclaiming inactive codes within 30 days after the reservation interval has expired under the relevant assignment guidelines. Under normal circumstances, this interval would be twelve months. In jeopardy situations and when NPA relief planning has been initiated, the activation interval should be nine months. No extensions should be permitted. Any disputes between NANPA and carriers regarding reclamation of NXX codes should be decided by the appropriate regulators, rather than by the Industry Numbering Committee or the North American Numbering Council. This will prevent parochial industry interests from influencing any decisions.[27]

[27] In practice, disputes should be rare because carriers will have incentives to meet the deadlines for activating their NXX codes if they know that inactive codes will be reclaimed.

4. State Conservation Plans.

The states must play a central role in efforts to optimize the use of numbering resources. They are responsible for area code relief. It therefore follows that they should be responsible for rate center consolidation determinations and for implementing, within Commission guidelines, the number conservation measures that are approved by the Commission.

The balance between Commission and state roles in numbering optimization is critical. The states are in the best position to implement specific policies because they must respond on a day-to-day basis to numbering concerns and because they have the responsibility of determining how and when area code relief is to be implemented. At the same time, the Commission must set coherent standards for the states to follow, and should not allow deviations from those standards. If the Commission fails to do so, then there no longer will be a national numbering plan, as envisioned by the creators of the NANP and by Congress when it enacted Section 251(e). A hodgepodge of local numbering plans would make it difficult for carriers to operate on a national basis.

The issue of NXX rationing provides a good illustration of this principle. All carriers recognize that rationing sometimes is necessary to ensure that NXX codes are not exhausted before area code relief can be implemented and to ensure that all carriers have a fair opportunity to obtain numbering resources when an area code is in jeopardy. Rationing also has the potential to be abused, however, if a state regulator is attempting to avoid implementing necessary area code relief. Thus, rationing guidelines, such as those developed in the *Pennsylvania Order,* are

necessary.[28] A similar approach should apply to any number conservation mechanism approved by the Commission in this proceeding.

This allocation of authority is entirely consistent with the Communications Act. Section 251(e) permits the Commission to delegate "any portion" of its authority over numbering to state regulators.[29] This language also allows the Commission to define the specific parameters of the delegation, including when state regulators can wield the delegated authority and what considerations must be included in any determination made under the delegation. In other words, Section 252(e)(1) is intended to facilitate the Commission's administration of the numbering plan, and consequently gives the Commission the maximum flexibility (within the bounds of the substantive requirements of the Communications Act) to determine how the NANP should be administered.

Moreover, states should be permitted to exercise their authority over approved numbering optimization mechanisms regardless of whether an area code relief plan has been adopted for a particular area. To the extent there are concerns that state regulators might attempt to avoid necessary area code relief through spurious conservation efforts, the Commission's guidelines should be sufficiently specific to prevent such actions. For instance, policies governing number rationing should, as noted earlier, limit the period during which rationing can be in place so as to prevent states from using rationing to extend the life of an area code indefinitely.

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[28] *Pennsylvania Numbering Order,* 13 FCC Rcd at 19025-6. Cox notes that one aspect of the *Pennsylvania Numbering Order's* treatment of rationing should be modified. The *Pennsylvania Numbering Order* does not permit rationing to be put into place until an area code relief plan has been approved. This may allow carriers to hoard NXX codes or engage in other behavior that will hasten exhaust. Cox suggests that state regulators should be permitted to require rationing so long as the area code is approaching exhaust and if the rationing plan is designed only to ensure that NXX codes do not run out before the projected exhaust date or the date relief will be implemented.

[29] 47 U.S.C. § 251(e)(1).

B. Several Proposed Optimization Methods Will Not Have Any Meaningful Effect on Numbering Resource Utilization.

1. Ten Digit Dialing.

Simply put, ten digit dialing is not a numbering optimization mechanism. While it may be used in connection with area code relief or may be adopted for independent reasons, ten digit dialing has no effect on the use of numbers by carriers or consumers. Moreover, ten digit dialing imposes real social costs, including the confusion caused by the transition to a new dialing plan and the costs of changing automatic dialing settings, which can be significant.

To the extent that adoption of mandatory ten digit dialing is permitted, it should be considered on a state-by-state basis, except in the case of implementation of area code overlays. As the Commission has determined, ten digit dialing must be mandatory for area code overlays to avoid some of the anticompetitive impact of overlays on CLECs.[30] There certainly is no basis for requiring ten digit dialing on a nationwide, generalized basis at this time.

2. "D digit" expansion.

"D digit" expansion, as described in the *Notice,* would change the current definition of NXX codes to permit codes that begin with a 0 or a 1.[31] This would increase the potential number of NXX codes by approximately 25 percent, but would not increase the efficiency of number utilization within those NXX codes.

While D digit expansion would increase the supply of numbering resources, it would be very expensive. Significant routing issues would have to be addressed before D digit expansion could be implemented. The transition would be long and the cost/benefit ratio would be poor. In

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[30] Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, *Section Report and Order and Memorandum Opinion and Order,* 11 FCC Rcd at 19329, 19518 (1996).

[31] *Notice*, ¶ 127.

practice, the adoption of D digit expansion could be comparable in cost to the industry to expansion of the NANP. In any event, the costs of D digit expansion would be considerably greater than those of BRIDS modification, UNP or number pooling, but the benefits would not be as significant. Thus, the Commission should not require D digit expansion at this time, or permit the states to adopt it as a numbering optimization mechanism.

3. Charges for Telephone Numbers.

The *Notice* seeks comment on various questions raised by the possibility of charging carriers for NXX codes.[32] However, the Commission lacks the authority to impose any charges in excess of the cost of administering numbering resources and the harms of creating new charges for NXX codes would outweigh any potential benefits.

First, it does not appear that the Commission has the authority to charge any substantial fee for use of NXX codes. The Commission's authority to mandate payment of fees of any sort is defined strictly by the Communications Act. This authority includes the power to collect mandated regulatory fees under Section 9 and the power to auction radiofrequency spectrum in certain cases under Section 310. Indeed, the Commission in the past has concluded that it does not have the power to impose charges on its regulatees without a specific grant of authority.[33]

While Section 251(e) gives the Commission the power to recover the costs of numbering administration, it does not permit any regime that imposes fees in excess of those costs. Section 251(e)(2) provides that: "The cost of establishing telecommunications numbering administration arrangements and number portability shall be borne by all telecommunications carriers on a

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[32] *Id.*, ¶ 225.

[33] *See, e.g.*, Implementation of Section 309(j) of the Communications Act – Competitive Bidding, *Notice of Proposed Rulemaking*, 8 FCC Rcd. 7635, 7638 (1993).

competitive neutral basis as determined by the Commission."[34] This authority does not include the power to impose any fee that exceeds what is necessary to recover the costs of numbering administration. In the absence of such authority, the Commission cannot charge fees for numbering resources that reflect market prices or some measure of societal costs associated with number usage.[35]

Even if the Commission did have the authority to impose charges for NXX usage, such charges would be imprudent. "Market-based" or other charges intended to reduce demand for numbering resources would act as an entry barrier to new competitors. Moreover, it would be very difficult to design a price regime that properly would account for how carriers impose numbering-related costs. For instance, while new entrants might appear to be causing the costs because they are the ones seeking new NXX codes, ILECs actually hold many more NXX codes than CLECs. ILECs also have many more unused numbers than CLECs. Similarly, ILECs set the rating points and local calling areas that CLECs now follow, creating the inefficient numbering resource assignment pattern that exists today. Thus, it is extremely difficult to identify the correct cost causers with respect to the imposition of fees.

Moreover, any charge for NXX codes or other numbering resources effectively would operate as a tax on entering the telecommunications business. Carriers already are subject to a wide array of fees and taxes, ranging from 911 taxes to fees for telecommunications relay service, universal service and numbering administration to gross receipts taxes at the state level. There is no reason to add another tax to this existing burden.

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[34] 47 U.S.C. § 251(e)(2).

[35] Given the strict interpretation that applies to any fee-related provision of the Communications Act, the Commission is not empowered to interpret the term "cost of establishing numbering administration arrangements" broadly to include societal costs of telephone number usage.

In practice, the correct solution is not to tax numbering resource users, but to eliminate the flaws in the current numbering assignment scheme that are creating the artificial shortage in numbering resources. Approaches such as BRIDS modification, UNP, pooling and rate center consolidation, which attack the basic problem, are much more likely to yield real solutions.

4. Mandated Fill Rates

The Commission should not mandate uniform fill rates for all carriers seeking new NXX codes.[36] As a practical matter, fill rates are more a function of the length of time a carrier has been in business and the areas it serves than of how efficiently it uses telephone numbers. Carriers that serve urban areas are likely to have fill rates that are greater than carriers that serve rural areas. Carriers that have been in business for decades are likely to have more NXXs per rating point (and therefore higher fill rates, because the older NXXs were "filled" prior to the addition of new NXXs) than newer carriers. Thus, if the Commission were to adopt some uniform fill rate requirement, it would create competitive disadvantages for newer and more rural carriers. Such a policy would be contrary to the requirement that numbering administration be competitively neutral.[37]

The Commission could attempt to detail fill rate requirements that recognize the differences among carriers, but this would be time-consuming and difficult. Given the historic structure of numbering assignments, including requirements for assignment of full NXX blocks, the large number of rating points and the impact of ILEC legacy systems on numbering requirements, it is unlikely that merely adopting fill rate requirements would have any

[36] Cox distinguishes mandating new fill rates from enforcing existing guidelines. As described below, Cox supports efforts to ensure that carriers meet existing requirements when they seek to obtain new NXX codes. *See infa* Part IV

[37] 47 U.S.C. § 251(e).

meaningful effect on numbering resource utilization. Indeed, fill rate requirements, standing alone, could create severe disadvantages for new entrants.

5. Area Code Relief

Although the *Notice* includes area code relief among the mechanisms for addressing numbering resource optimization, as a practical matter such relief can have little or no effect on the efficiency with which numbers are used.[38] Area code relief does not reduce the number of rating points or make NXX code assignment more granular, but merely adds more NXX codes to a particular area.

In particular, there is no inherent benefit to area code overlays. They do not increase the total numbering resources available through the NANP, which should be the primary concern in this proceeding. Overlays have significant unmeasured costs, such as the costs of converting to ten digit dialing and the costs of replacing or upgrading legacy customer premise equipment. Moreover, claims that overlays are more appropriate when there has been recent relief activity generally are not sound.[39]

At the same time, the Commission's rules governing overlays, such as the "one NXX" rule, do not fully mitigate the impact of overlays on CLECs, especially in area codes with a large number of rating points. In the current environment, one NXX code allows a CLEC to provide service from one rate center, not from the entire area code. Considering that most area codes have dozens of rate centers, and that many have hundreds, assignment of a single NXX code is not sufficient to eliminate the anticompetitive effects of overlays on new competitors.

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[38] *Notice*, ¶ 247.

[39] The time between relief activities should not affect the question of which method of relief should be chosen because all relief methods have impacts on end users, such as the requirement for ten digit dialing in an overlay.

While current forms of area code relief will not improve numbering resource utilization, the Commission nevertheless should continue to explore potential mechanisms to improve area code relief. One mechanism that should be considered in detail is the "expanded NPA overlay," which effectively is a hybrid between an overlay and an area code split.[40] Such hybrid relief could provide ways to improve the efficiency of NXX code usage within densely populated area codes.

IV. The Commission Should Complement Substantive Number Optimization Plans with Specific Measures to Improve the Administration of Numbering Resources.

The various numbering resource optimization proposals discussed above are only part of the entire scheme of efficient numbering resource use. Administration of numbering resources also plays an important role in preventing premature area code exhaust and unnecessary area code relief. In particular, the Commission should work to improve the administrative process through better forecasting, improved recordkeeping and limited audits, with specific enforcement provisions.

One of the most critical problems facing numbering administrators and regulators is that they are unable to make reliable forecasts of numbering resource usage. Forecasts are unreliable for several reasons, including double-counting of demand and failure of carriers to provide information. The Commission should address these problems in this proceeding.

Current forecasts are imprecise because carriers are not required to make forecasts on a rate center basis. Since each carrier assumes it will be successful in selling to each targeted customer, forecasts of NXX needs often are overstated.[41] Forecasting can be improved in three

[40] *Id.*, ¶ 254.

[41] Comments from the NANPA suggest that, as a result of these overstated forecasts, some customers are double- or triple-counted.

ways. First, forecasts should be made at the rate center level to improve the precision with which they are made. Second, NANPA should use this data to eliminate double- and triple-counting of customers. One way to accomplish this would be to compare carrier projections to growth rates in telephone lines in the forecast geographic area. Third, utilization levels also should be calculated based on the locations where numbers are assigned, that is, landline rate centers for landline carriers and the equivalent points for wireless providers. It is important to keep these data at the rate center level, rather than the NPA level, to ensure that NXX assignments are made only when necessary. This will assist regulators in determining how to implement numbering resource optimization mechanisms. These data also will assist in relief planning. If these data are maintained, there should be no need to change the existing central office code assignment guidelines, although the Commission should consider how to address non-compliance with the requirements of the guidelines.

The Commission should address recordkeeping and reporting requirements. At present, NANPA maintains information at the level of NXX codes. If the Commission adopts mechanisms that change the geography or granularity of numbering assignments, NANPA should change its recordkeeping accordingly.[42] As noted above, information also should be maintained at the rate center level (or equivalent for carriers that do not adopt ILEC rate centers). All carrier reports should conform to the geographic assignments (*e.g.*, rate centers) and to the size of number blocks they are assigned.[43] Each carrier should bear its own data collection costs, and any NANPA costs should be included in the current NANPA funding mechanism.

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[42] For instance, to the extent that thousands block pooling is adopted, NANPA will need to keep information at that level.

[43] As the level of disaggregation of carrier reporting increases, it will be important to ensure that NANPA maintains information from carriers in strictest confidence. The business risks of release of such specific information are significant.

To make forecasts, NANPA should use the Hybrid COCUS model recently adopted by NANC. This model addresses some of the most significant concerns raised by the earlier COCUS and should be given an opportunity to work.

Another important component of the reporting and forecasting process is auditing. While audits are necessary to ensure compliance, they should not be routine. Rather, audits should be performed only when there is reason to believe a carrier is not complying with recordkeeping and reporting requirements (such as false information provided with an NXX code request). Otherwise, they should be made on a random basis every five years. This could be sufficiently frequent to provide incentives for carriers to comply. If an audit discovers discrepancies, the carrier should be subject to audits every two years until all discrepancies are resolved. The Commission also could enforce reporting requirements by adopting a rule that does not permit a carrier to receive NXX codes or other numbering resources unless it has made all required reports.

Audits should not be performed by the industry or by NANPA, but instead should be the responsibility of regulators. Similarly, enforcement of these requirements should be a regulatory responsibility, and carriers should be subject to financial penalties for violations. Because states are the most likely bodies to engage in audit and enforcement, it is critical that the Commission provide specific guidance as to how audits are to be conducted and how requirements can be enforced. Just as numbering policy in general must be uniform, there also must be uniform enforcement of that policy across the entire country.

V. Conclusion

For all these reasons, the Commission should adopt rules in accordance with the proposals herein.

Respectfully submitted,

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July 30, 1999

CERTIFICATE OF SERVICE

I, Taunya L. Ferguson, hereby certify that I sent a true and correct copy of the foregoing Comments of Cox Communications, Inc. on this 30th day of July 1999, via U.S. mail postage-prepaid or hand delivery to the following:

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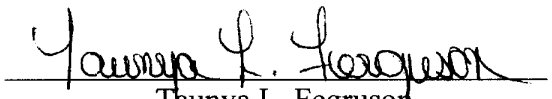

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* Denotes delivery via first-class U.S. mail, postage prepaid.